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Franciscan Manzanita 90-day finding

Questions and Answers

Q. What do we know about this species, and what makes this plant different from other manzanitas?

A. Franciscan Manzanita (*Arctostaphylos franciscana*) is a low, spreading to ascending evergreen shrub in the heath family (*Ericaceae*) that may reach two or three feet in height when mature. Its leaves are about one-half to three-quarters of an inch long, are isofacial (have the same type of surface on both sides), and are oblanceolate (longer than they are wide and wider towards the tip). Its mahogany brown fruits are about a quarter to a third of an inch wide, while its urn-shaped flowers measure about a quarter inch long. A similar-looking species, bearberry (*A. uva-ursi*), can be distinguished by its lack of isofacial leaves. It is native and restricted to the San Francisco peninsula, and historically occurred in areas with serpentine soils and bedrock outcrops. Recent taxonomic revisions have established *A. franciscana* as a separate species, based primarily on genetic comparisons, including the fact that *A. franciscana* has 13 pairs of chromosomes, while its closest relative (*A. montana ravenii*) has 26 chromosome pairs.

Q. When did it disappear from the wild until the Doyle Drive finding?

A. Prior to October 2009, *Arctostaphylos franciscana* had not been seen in the wild since 1947. It was originally known from three locations in the Masonic and Laurel Hill Cemeteries in San Francisco's Richmond district, and from Mount Davidson in the south-central part of San Francisco. Unconfirmed sightings were also noted at a possible fourth location near Laguna and Haight streets. The Masonic and Laurel Hill Cemetery sites had been converted to urban development by 1947. The Mount Davidson and possibly the Laguna and Haight streets locations were presumably lost to urbanization as well.

Q. Why didn't the Service do an immediate listing of the species, ie, an "emergency listing" under the law, which would have given it immediate protection?

A. A cooperative conservation plan and an agreement among the relevant agencies had been drafted by time the petition to list the species was submitted. That plan provided a strong framework for protecting the single plant and propagating it. These propagation efforts will reintroduce the plant into the wild and by planting offspring from all the known genotypes together, exchange of genetic material is expected to occur. The goal of the latter plantings will be to establish new, self-reproducing populations with consideration of local adaptation. In the view of the Service, an emergency listing would not have provided any additional protection—or even as much protection—as the cooperative conservation plan that had been developed.

Q. How old is this plant?

A. The one existing plant is presumed to be decades old, although there is no way of determining its age for sure. Doyle Drive was constructed in 1936, which may be a reference point, given the location of the plant when discovered.

Q. Why wasn't this plant found until they were into construction?

A. Incredibly, the plant was living just a few feet from, and between, two heavily travelled, high-speed roads. But it was not at eye level and was densely screened from passing traffic by larger trees and plants. Because it was in an isolated patch of land surrounded by freeways, it was not accessible to the public and even people on official business had to cross the highways at considerable hazard.

Q. Who found the plant?

A. We understand that a botanist named Daniel Gluesenkamp of Audubon Canyon Ranch spotted it.

Q. Shouldn't the plant have been left where it was, rather than risk moving it?

A. Squeezed in between two major highways, its original location obviously was not ideal. The conservation planners concluded it was not feasible to leave the plant undisturbed at its original site.

Q. What has been done to save the species since this discovery?

A. The conservation plan recommended that the plant be moved to a new site within the Presidio. The plant was carefully moved to an undisclosed location on Jan. 23, 2010. An 11-ton rootball was moved, with extensive underlayment to keep it intact.

The conservation plan also includes measures to take cuttings from the plant, both from non-rooted stems and from layering stems (stems which have rooted at their leaf nodes), for vegetative propagation. The plan also called for collection and eventual propagation of seeds (including seeds in the soil around the plant's original location), and for genetic testing of resulting plants (since seeds fertilized in the wild would likely produce hybrids). Additionally, because the roots of most *Arctostaphylos* individuals establish a mutually beneficial association with species of mycorrhizal fungus living in the soil, the conservation plan established means by which the soil for propagating cuttings and seeds should be inoculated with spores from such fungi. The plan also evaluated potential translocation sites, established procedures for preparation of the new site and the translocation itself, and set up management and monitoring (both short- and long-term) of the translocated plant and all newly propagated plants, with the goal of eventually establishing self-sustaining populations of the species in the wild.

Q. Isn't the plant at risk until you complete the listing?

A. The conservation plan includes an extensive strategy and commitments to protect the plant. These measures, which include both short term measures and long-term commitments, provide the best likelihood of protecting this species, in the view of the Service.

Q. Was there any political pressure to move the plant quickly so it wouldn't slow the Doyle Drive project?

A. No. Local officials were kept apprised on the research and development of the conservation plan and MOU. They did not participate in it.

Q. How much has the process to save the plant cost?

A. That question is better addressed by Caltrans.

Q. Where are the plants that are in cultivation and why couldn't they protect the species as well, and cheaper, than the moving plan?

A. The authors of the conservation plan acknowledge that cultivars of *Arctostaphylos franciscana*, likely descended from some of the last wild *A. franciscana* plants known to exist in the 1940s, are available in commercial trade, and are "popular with home gardeners." Since hybridization between

diploid species of manzanita is well recognized, there is a good chance that many of these commercially available specimens result from hybridization. Accordingly, any propagation or reintroduction programs for *A. franciscana* must account for the threat of cross pollination from hybrids or other species, and subsequent contamination and swamping of the *A. franciscana* gene pool. Accordingly, we find that substantial information regarding threats from this factor exists to indicate that listing may be warranted. Diseases, notably crown rot and twig blight, also are risks.

Q. Where can the cultivated (non-wild) plants be found?

A. There are cultivars in several Bay Area arboretums, including the University of California at Berkeley and Strybing arboretums. Some commercial nurseries also offer plants that they identify as *Arctostaphylos franciscana*. Prior to the loss of the wild plants, botanists collected cuttings and rooted specimens of wild *A. franciscana*, representing at least three genetically distinct individuals, and propagated them. Modern botanical collections of this plant include some of the original specimens from Laurel Hill, as well as specimens propagated vegetatively since the species became extinct in the wild. The specimens, both those originally from Laurel Hill and those propagated thereafter, have been successfully planted on a wide variety of soils despite the fact that historic sites in the wild are primarily underlain by serpentine outcrops. Serpentine soil restricts the growth of many plants due to its high nickel and magnesium concentrations, and thus tends to support unique plant communities, including this species.

Q. What is the difference between a 90-day finding and a 12-month finding?

A. The “substantial information” standard for a 90-day finding differs from the ESA’s “best scientific and commercial data” standard that applies to a status review to determine whether a petitioned action is warranted. A 90-day finding does not constitute a status review under the ESA. In a 12-month finding, the Service determines whether a petitioned action is warranted after completing a thorough status review of the species, which is conducted following a substantial 90-day finding. Because the ESA’s standards for 90-day and 12-month findings are different, as described above, a substantial 90-day finding does not mean that the 12-month finding will result in a warranted finding.